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ABSTRACT

This article urges a reexamination of the concept of dissemination of health-related prevention programs. The article discusses factors that serve as sustaining conditions for dissemination of prevention programs including: (1) the nature of preventive intervention and parameters of effective community-based prevention praxis; (2) aspects of the infrastructure needed for widespread implementation of an innovation; and (3) developmental factors among program developers and implementors. The article then examines the necessity of carrying out action research in a spirit of continuous improvement and of elaborating on what most models refer to as the dissemination or diffusion stage. Guidelines are provided for maximizing the likelihood that prevention efforts initiated outside one's setting will be implemented with long-term goal attainment. A five-step task analysis for widespread prevention program implementation is detailed: (1) project definition; (2) marketing; (3) installation; (4) follow-up; and (5) project network building. The Social Decision Making and Problem Solving Project, a school-based prevention initiative, is used as a source of case examples. Three recommendations are offered: (1) preparation of administrators to be action researchers; (2) changes in higher education, teacher and administrator training and supervision, and in the preparation of pupil services staff; and (3) realignment of schools to become centers for parenting support and education. Contains approximately 70 references. (SD)

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Reinterpreting Dissemination of Prevention Programs as Widespread Implementation With Effectiveness and Fidelity

MAURICE J. ELIAS

The Emperor is not wearing any clothing. The hoopla surrounding large, well-funded prevention demonstration projects and school-based reform efforts must be contrasted with data from the mid-decade review of progress toward achieving national health objectives for youth by the year 2000 (Fleming, 1996) and from *Kids Count* (1995), which monitors indexes of well-being among youth in each of the 50 states as well as within a number of states. These data show clearly that little progress has been made across key areas such as alcohol, tobacco, and other drug use; mental health and mental disorders; violent and abusive behavior; sexually transmitted diseases; and child protective and clinical preventive services. There is a trend toward more youth being caught in the grips of poverty and dangerous environments in their schools and communities. Leaders in the field continue to recognize that the impact of preventive mental health services on public policy and public health has not been substantial, yet must become so if the field is to be viable in the future (Lorion, 1993).

To be most accurate, we might wish to say that the Emperor is wearing one or two socks, perhaps an ascot, even a belt on occasion. There are some areas of progress, and there are some communities that have witnessed profound change in the health of their youth.

But overall—and most certainly for urban youth and those who are minorities—it is best to see the glass as 90% empty rather than 10% full.

Among many reasons for this are shortcomings in the area of dissemination of prevention programs. This can be seen clearly in the structure of perhaps the most critical public document in the health promotion area, *Healthy People 2000* (U.S. Department of Health and Human Services, Public Health Service, 1991). Specifically, there are numerous objectives in the categories of health status, risk reduction, and services. Monitoring the accomplishment of these objectives is addressed in the section on surveillance and data systems. But there is little, if anything, said about the specifics of how these objectives are to be met, or about the dissemination of different programs to reach the services objectives. The absence of such discussions makes it unclear as to how the entire nation's health will be affected in a positive way. Even in a companion document, *Healthy Schools: A Directory of Federal Programs and Activities Related to Health Promotion Through the Schools* (Federal Interagency Ad Hoc Committee on Health Promotion Through the Schools, 1992), there is an extensive listing of programs with virtually no discussion of the conditions of implementation in which those programs had proven themselves effective, nor is there a discussion of parameters of implementation that prospective program adopters might need to consider.

It is becoming clear that those interested in programmatic or systemic efforts to prevent problem behaviors and promote social-emotional competence and good health among our nation's youth must challenge conventional wisdom with regard to dissemination. A realignment toward the concept of implementation and away from the concept of dissemination is needed. In fact, the use of the term *dissemination* both reflects and drives the disappointing rate at which prevention programs spread from their development sites to other sites and retain or exceed their original effectiveness.

Implications of the Language of "Dissemination of Interventions"

It may be surprising how the failure of interventions and programs to disseminate has much to do with the language and conceptual structure that surrounds these very terms. As noted

earlier, it serves key public health goals to see that successful preventive *interventions* are effectively *disseminated* or *diffused*. Consider, however, the meanings of these terms. Intervention is from the Latin *intervenire*, meaning "to come between"; *Webster's New World Dictionary* uses the words *interposition* and *interference* in defining intervention. Innovation comes from the Latin *innovare*, "to renew." Improvement is derived from the Latin *probare*, meaning "to approve." *Webster's* defines improvement as making something better, to advance in good qualities. During the 1960s and early 1970s, interventionist language perhaps conveyed the true intention of many professionals who were early adherents to a prevention approach: a disruption from the existing order, an end to social evils, a qualitative change. But social ecology theory (Kelly, 1990) suggests that organizations can support improvement or innovation in the absence of clear crisis more easily than they can support intervention. Indeed, to the extent to which preventive efforts are perceived to be interventions, it is likely that they will be resisted and, on withdrawal of external supports, discontinued (Berman & McLaughlin, 1980; Blumberg, 1980; Commins & Elias, 1991). Entrenched bureaucratic organizations have enormous capacities to assimilate (i.e., to make incoming stimuli conform to already existing structures) and to resist accommodation (i.e., changing structures to allow incorporation and use of valued information contained in incoming stimuli). Interventions, particularly to the extent to which they fail to respect adequately the culture, history, symbols, and rituals of the host setting, are clear candidates for assimilation—if the external boundaries are even allowed to be permeated (Elias & Clabby, 1992; House, 1974; Sarason, 1983).

Dissemination derives from the Latin *disseminatus* or *disseminare*, meaning "to scatter seed," "to spread abroad." Diffusion is a similar word, based on the Latin *diffusus*, "to pour in different directions." In the educational literature, prominent terms include *institutionalization*. The derivation is the Latin *institutum* or *institutus*, meaning "arrangement, plan, intention"; "to set up, erect, construct." *Webster's* defines the word as meaning an established principle of law, custom, or usage. Routinization derives from the French *route*, "the customary way." Dissemination reflects what Stolz (1984) has referred to as a "publish and hope" approach, relying on written communication or one-shot presentations to serve as an adequate medium for generating the organizational

change that prevention requires. This is to be contrasted with terms that reflect a process, laborious but planful, of creating a new structure or procedure, a new accepted, "customary way." House (1974), Baldridge (1975), and Berman and McLaughlin (1980) have studied implementation and institutionalization of innovation in literally thousands of schools. They never use the term *prevention*, but their work is certainly preventive. An alternative formulation to typical approaches to dissemination is to work with existing socialization settings to help them become more innovative, dedicated to the continuous improvement of their impact on health and social behavior and the broad fulfillment of their socialization roles. It has been argued that creating such organizational cultures, particularly in the schools, is among the most powerful ways to build and maintain competence in children and adolescents and serve the goal of prevention (Elias & Clabby, 1992; Kelly, 1984).

To accomplish this requires a reexamination of the concept of dissemination. While the broad themes in this chapter may—indeed, should—seem familiar, I will highlight subtle factors that I believe serve as sustaining conditions for the present approach to dissemination of prevention programs. These include the nature of preventive intervention and parameters of effective community-based prevention praxis, aspects of the infrastructure needed for widespread implementation of an innovation, and developmental factors among program developers and implementers. The necessity of carrying out action research in a spirit of continuous improvement and of elaborating on what most models refer to as the dissemination or diffusion stage will be emphasized. Guidelines will be provided for maximizing the likelihood that prevention efforts initiated outside one's setting will be implemented with long-term goal attainment. The Social Decision Making and Problem Solving Project (Elias, 1994; Elias & Clabby, 1992), a school-based prevention initiative closing in on its second decade of operation, will be used as a source of case examples.

Merits of an Action-Research Approach to Developing Preventive Efforts

There is much consensus that the guiding approach for the operation of social competence promotion and problem behavior prevention programs in school and community settings should be

Lewin's (1951) concept of *action research*. At its essence, action research involves the idea of testing theories and methods by putting them into practice, evaluating their impact, and using the results to refine future theory, method, and practice. Action research is seen as involving ongoing cycles of problem analysis, innovation (intervention) design, field trials, and innovation diffusion (dissemination), leading to ever more precise variations and targeting of programs to recipient populations and settings (Price & Smith, 1985). The entire model is cyclic because ongoing monitoring of problem areas will yield information as to whether the program is having a significant impact, with which populations, and in which settings. Such information then leads to the development of refined or new problem statements, which in turn inspire further cycles of prevention research, development, and evaluation directed toward further problem reduction and health and competence promotion (Mrazek & Haggerty, 1994).

Rossi (1978) added some important elaboration of the idea of evolution or transfer of the control of the program technology—including implementation, evaluation, modification, and extension—to agents other than the developers. He defines three levels through which programs must pass before they can hope to have a policy-level impact.

1. Experimental: A program must demonstrate its effectiveness under small-scale, optimal conditions, compared to a no-treatment or alternative comparison control.
2. Technological: A program must demonstrate that it can be effective under real-world conditions, but still under the guidance of its developers.
3. Diffusional: A program must demonstrate that it can be effective under real-world conditions and when it is not, under the direct scrutiny and guidance of its developers.

When a program successfully passes through Rossi's diffusional stage, it is not automatically diffused; rather, it is capable of widespread use. Implicit at the diffusional or dissemination level is that a program demonstrate experimental and technological effectiveness and that a program undergo a phased generational transfer from the developers to a new cadre of implementers who will take ownership and become agents of effective diffusion and further

development, as needed. However, in neither Price and Smith's (1985) nor Rossi's (1978) models is there explication of how broad dissemination of programs—of the kind that would affect statistics for *Healthy Youth 2000* or *Kids Count*—is to take place.

The challenge of dissemination can be concretized by examining cases of a relatively well-publicized and well-supported area that also is related to prevention: school reform. F. James Rutherford, Director of Project 2061 at the American Association for the Advancement of Science, has noted that he gets calls, requests, letters, and the like from all over the country from people who are excited about the work of his project and want his help to implement. He tells them he can't. Why? Because "there are more of you than there are of us" (Rutherford in Olson, 1994, p. 43).

Indeed, those who have created successful demonstration models of school reform, such as Ted Sizer (Coalition of Essential Schools), Robert Slavin (Success for All), Gay Sue Pinnell (Reading Recovery), Henry Levin (Accelerated Schools Project), Joy Dryfoos (Full Service Schools), and James Comer (School Development Program), are among the innovators who have been able to achieve some measure of consensual success in a limited number of settings but have not solved the problem of how to disseminate their work more broadly. Similar tales of woe have been told by those working in the mental health field (Schorr, 1988). This process of "scaling up" goes beyond the diffusional stage described by Rossi and invokes an additional stage, which I refer to as that of "widespread implementation with fidelity and effectiveness."

In a similar way, there is evidence that school-based prevention programs can provide children with skills, supportive environments, and positive life opportunities needed to allow them to cope better with pressure from peers and others to use or abuse drugs and alcohol, engage in delinquent acts, neglect school work, become involved in premature sexual activity, or attempt health-compromising activities (Elias, Gager, & Leon, in press). But these programs are not immune from concerns about scaling up. They have touched far fewer students than those who would appear able to benefit from them. The School Intervention Implementation Study (SIIS) emerged from the realization that there has been little examination of the nature and impact of the dissemination of these programs. In the drive to procure and fund "new programs," the SIIS was an effort to learn about what happens when programs

developed and studied under ideal or at least controlled conditions are placed into the schools, typically without systematic evaluation and with the assumption that these programs are going to have a genuine impact on the problem areas that they were designed to affect.

Surveys were sent to the approximately 550 operating school districts in New Jersey, a state that can provide an indication of trends in other parts of the country (Elias, Gager, & Hancock, 1993). New Jersey has metropolitan areas, various types of suburbs, significant rural areas, and shoreline districts. Furthermore, few states in the United States have as many or more school districts than are located in New Jersey; there is a variety of district organizational arrangements and styles that covers the range of what can be found nationally. Finally, New Jersey is a national leader in mandated prevention programs, particularly around substance abuse prevention and AIDS prevention. Thus, the findings from the SIIS were likely to portray the state of the art as contained in the more progressive states, and provide valuable lessons for states that are following down the path of increasing mandated preventive and competence promotion programs. The overall response rate was 65%, highly satisfactory for a study of this kind and scope.

Findings. While the SIIS survey revealed many programs in operation across New Jersey, there was little consistency in their implementation. The vast majority of districts are doing "something" related to the prevention of substance abuse and the promotion of social competence. However, what is taking place is not systematic. In spite of mandates and encouragement for K to 12 programming, only 10% of the districts have a program running throughout the elementary years, 6% have a program throughout middle school, and 12% throughout high school. One third of the districts had at least four grade levels that received no prevention programming. Children receive little continuity in prevention programming within or across communities, and there appears to be an inexplicable neglect of programs for children classified as needing special education services. Furthermore, the programs that are used are not necessarily those supported by a "track record" of empirical evidence for success, or even a documented history of effective use and positive impact in districts similar to those in which they are being carried out locally. But equally distressing is that in districts

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implementing well-supported programs, instances of implementation success were matched by failure. Thus, even the most promising programs showed an uneven record of dissemination.

Challenges in the Widespread Implementation of Durable Preventive Efforts With Fidelity and Effectiveness

There seems to be a growing recognition that the content of preventive programs and even their passing through Rossi's technological stage is at best a necessary but certainly not sufficient condition for successful replication; what is most important is the nature of the implementation process (Kelly, 1979) and the way it takes place in a variety of implementation contexts.

There are numerous considerations that influence the fate of a prevention program and help explain why Kelly's observation is so astute. The sheer number of factors involved in understanding a phenomenon that one wishes to prevent, or a competency or positive condition one wishes to promote, can seem daunting. As a program or other change effort is contemplated, it becomes necessary to document carefully what is happening in the system so that change pathways can be illuminated and both intended and unintended effects—of both positive and negative types—can be monitored and changes made as needed.

Parameters to consider when one is interested in bringing into a system any innovation in prevention and health promotion can be derived from many sources, especially the orientation of the field toward an ecological approach to research (Vincent & Trickett, 1983) and examinations of community psychology practice by some of its foremost proponents (e.g., Chavis, 1993; Price, Cowen, Lorion, & Ramos-McKay, 1988; Wolff, 1987, 1994). Borrowing from the tradition of Lewin (1951), Rotter (1954), Albee (1982), and Elias (1987), these parameters have been cast in the form of an equation (Elias, 1994). The equation attempts to capture the notion that the greater the value of the terms on the right side, relative to what might be optimal or possible in a setting, the more effective one will be at implementing a preventive innovation, denoted by the term *praxis*, which refers to reflective, action research-oriented prevention practice:

$$Praxis_{D,H,S} = \frac{GITPL + CATP + PEL + ATIS + RAT + AUFM + HOC}{C/R}$$

where

- *GITPL* = *grounding in the problem and the literature*
- *CATP* = *clarity about theoretical perspectives*
- *PEL* = *principles of effective learning*
- *ATIS* = *appropriate tailored instructional strategies*
- *RAT* = *relevant applicable tactics*
- *AUFM* = *available user-friendly materials*
- *HOC* = *hospitable organizational contexts*
- *C* = *constraints*
- *R* = *resources*
- *D*, *H*, and *S* refer to the specific *developmental*, *historical*, and *situational* context of the prevention or health/competence promotion activity

Change agents interested in prevention must be prepared to immerse themselves into local settings and contexts, to be patient, to build and extend their ranks through participation, collaboration, and explication (O'Donnell, Tharp, & Wilson, 1993). It is a tenet of the field that the energy and direction for solutions for social problems come from the local level (Cowen, 1977; Price & Cherniss, 1977; Tolan, Keys, Chertok, & Jason, 1990). Implicit is that ongoing critical self-awareness is a necessary precursor to lasting change; it also appears to be necessary for effective, enduring collaboration (Elias, 1994). The "praxis equation" outlines the tasks necessary for implementation, based on our current knowledge.

The first two terms reflect the need to be grounded not only in past work but also in the conceptual underpinnings of what one is attempting. The next four terms relate to the mechanics of creating change. Change involves some kind of education, or reeducation, and some corresponding actions. Much has been learned about techniques for accomplishing this kind of education, although remarkably little of it finds its way into the interventions in the literature, in part because of traditional research design and publication-related constraints. To the extent to which effective learning principles, engaging strategies, consonant behavioral tactics, and adequate supportive materials are not available and used,

even the most sound intervention or "practice" ideas have only a small chance of coming to fruition as intended.

The seventh term, *HOC*, indicates that consideration must be given to the organization context of the work, and the balance of available resources and constraints in the intervention context. Price and Lorion (1989) and Van de Ven (1986) suggest that members of an organization must be "ready" to accept an innovation, preventive or otherwise. There must be a perception that there is environmental press, or at least support, for the innovation, an awareness and acceptance of a problem by the host organization, and a set of attitudes, beliefs, and practices on the part of staff that is compatible with the preventive effort being proposed. Within the organization, there must be structures and services already in place that will facilitate the preventive approach being planned. Certain types of resources—funds, facilities, and expertise—also must be accessible, and potential implementers will require reassurance that all these supports are in place. These are elements that can be seen as related to the likelihood of success with a preventive innovation. If these are not in place, Price and Lorion would advocate for capacity building before beginning, or continuing to look for the most hospitable site possible. Even a cursory look at the equation makes clear the challenge of intervention in contexts of poverty, violence, distrust, and apathy, and the need for much "groundwork" to be done before embarking on interventions with a hope of lasting success.

Added Challenges of Dissemination

Dissemination of interventions is no less complex. In fact, there often are added challenges. As noted earlier, it is typically the case that innovations are established under demonstration project conditions. This implies that there are special funds, readily available materials, careful training and follow-up consultation, and the presence of evaluators on the scene to observe the work, take measures and give feedback, and involve the host site in modifying the intervention in light of the data. These special conditions create an implementation context that subsequent sites often are hard-pressed to match. The literature is replete with examples of how changes in programs during the dissemination stage led to their demise or to disappointing effectiveness (the way in which the Perry

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Preschool Project served as the impetus for a national Head Start program is among the most potent situations in which dissemination took place under conditions highly variant from the original; see Schorr, 1988, for a full discussion of this and other examples).

The developmental aspect of innovations for prevention is fascinating at multiple levels and, though rarely discussed, quite a formidable issue. RMC Research Corporation (1995), which has spent years studying the spread of exemplary education programs through the U.S. Department of Education's National Diffusion Network, reports the following progression since the National Diffusion Network began in the 1970s:

1. Cookbook: Programs had to be thoroughly documented, ideally in "kits" that could be followed precisely.
2. Replication: Model programs were replicated by having staff trained in the methods used by program developers and then bringing these methods back to one's own settings to be carried out as similarly as possible.
3. Adaptation: Models are understood to require adaptation to the unique context of the host site, ideally by having the developer serve as a consultant in making the necessary changes.
4. Invention/innovation: Now models are being seen as sources of ideas and inspiration rather than procedures to replicate or adapt. There is emphasis on creating one's own program, tailored to the unique circumstances at a given time.

Note that these broad trends, played out over three decades, parallel interesting issues in individual development illuminated by Piaget and Erik Erikson. The four approaches above certainly have their parallel in Piaget's stages—sensorimotor, preoperational, and concrete and formal operations. Note, though, that Piaget's theory is an epigenetic theory, a theory about how knowledge develops. The idea of dissemination is based on a model that is at best preoperational, because it is based largely on information distribution, as typically practiced. People obtain materials about a program, perhaps see a brief demonstration or attend a single training session, and then are expected to implement in their home settings.

Erikson (1982) pointed out that the majority of adult learners who will be the targets of dissemination efforts will be in the stage of generativity. Broadly speaking, this stage is one in which develop-

ment and ownership are key elements. There is a special sense of fulfillment in being generative, as opposed to exact replication of that which others generated. This directly supports RMC's findings, as well as those of the SIIS, and helps explain why so many schools create their own programs out of existing ones rather than adopt or adapt programs developed by others. SIIS and other data indicate that the tendency to invent is greater than the tendency to adapt or adopt.

Thus, successful dissemination really is implementation and institutionalization in a new site that captures the excellence of practice by linking practice to theory. What is "transferred" to others includes not only procedures but an understanding of the principles that undergird and comprise that specific example of practice. From this perspective, it is not only necessary to "talk the talk and walk the walk", it is necessary to "talk the walk," to explicate practice activities in an articulate and heuristic, generative, instructive, and inspiring manner (Elias, 1994; Fullan, 1994), as the praxis equation attempts to delineate. So doing provides maps of patterns of change, markers for shifts in the terrain, realistic guideposts, and other forms of anticipatory and reactive guidance for work in particular developmental, historical, and situational contexts—the *D, H, S* in the praxis equation.

Prevention Occurs in Operator-Dependent and Complex Sociotechnical Systems: Limitations and Solutions

Two interrelated factors serve as limiting conditions on the spread of preventive efforts: Prevention and competence promotion involve operator-dependent sociotechnical systems that tend to be characterized by high complexity of their core elements, particularly those that are comprehensive and occur over multiple years and settings. Each of these concepts requires some elaboration.

Operator-Dependent Sociotechnical Systems

Rossi (1978) was able to explain the difficulties in programs reaching the diffusional stage by noting that preventive efforts rely

on human beings to carry them out, and typically to exercise many judgments while so doing. Certainly, this is true in any classroom-based prevention program. The teacher or group leader has relatively few guidelines for carrying out the necessary activities in the particular context he or she is facing. From one grade level to the next, sources of implementer-based (operator-dependent) variability abound, a facet of general education that is equally true and underappreciated.

The operator-dependent label, while coined by Rossi, is reflected in the writings of other experts on the spread of innovation. Yin (1979) emphasized the importance of local ownership, early practitioner involvement, and comfort and skill with the innovative technologies. Stolz (1984) indicated that the single largest influence on results seems to be personal interactions between the innovator and key decision makers in the host organization. Rothman, Erlich, and Teresa (1976) elaborated this idea and suggest that what must emerge from these interactions is a combination of leadership, interest, enthusiasm, determination, commitment, aggressiveness, and caring. Without these features—whether they come from a single place, dyadic relationship, or committee—incoming innovations are unlikely to take root.

Tornatzky and Fleischer (1986) suggested that it is important to label preventive innovations, even those that appear to be delimited programs or interventions, as sociotechnical systems. Such systems have several features. First, they are organizationally unbounded, in that they reach into all facets of how an organization operates and require at least some degree of change. This is consistent with Kelly's (1990) ecological concept of interdependence. Second, they are fragile and difficult to specify in detail. Their critical elements are not clearly identifiable, because they cannot be seen easily in independent operation of the kind implied by most experimental or intervention components research designs. Once begun, they take on a unique configuration matched with the host environment. However, there are threads of connectedness, and once aspects of such programs are damaged, diluted, weakened, omitted, or in other ways compromised, the desired results are less likely to be obtained. Hence, sociotechnical systems, by virtue of their complex embeddedness in their host environments, appear fragile.

Third, the operation of sociotechnical systems is longitudinal and developmental. Not only are they intended to last a long time, but

they are likely to be operated by a succession of individuals, each of whom enters the system with a different relationship to the history and context. The dissemination of information about a new program or innovation is just the beginning of a process that, to be successful, must permeate the institutional culture.

Price and Lorion (1989) highlighted some additional organizational features of organization life that extend the ideas of Tornatzky and Fleischer (1986), elaborated aspects of the praxis equation, and integrated them with Rossi's caveats about the nature of operator-dependent innovations. They maintained that implementing a model prevention program in a new site is organizational reinvention in several ways. First, bringing in a program is an organizational-level event. Second, a model program can be defined as having core and adaptive features. The former must be replicated as faithfully as possible; the latter must be adjusted to local needs of the setting while still maintaining the overall fidelity of the newly implemented program to the model. The complexities of this process can be at least as daunting as developing a program, a fact that Price and Lorion (1989) indicated is too often lost on prospective implementers.

There are two necessary but not sufficient conditions for such organizational reinvention, conditions that quite clearly reflect the importance of the "human element" in the successful spread of preventive efforts: There must be a focal prevention innovator who possesses key skills, and there must be organizational readiness in the host environment. Among the skills needed by innovation implementation leaders are a strong goal orientation, an orientation toward external networking, the ability to locate and mobilize resources, a collaborative/participatory orientation, negotiation and coalition building, cultural sensitivity, and mastery of elements of the praxis equation.

Ongoing steps also have an impact on potential success. These steps include ongoing environmental scanning, information gathering, team building, and joint planning. The latter function is given particular emphasis, to make sure that stakeholder participation and input are maximized and to foster a greater sense of openness, which in turn should maximize mobilization of available resources. Also at this time, setting benefits—including implementer benefits—should be articulated so that appropriate

baseline data and other indicators can be set up and collected as early as possible.

Taken together with the earlier considerations about operator dependence and sociotechnical systems, this explains why school personnel are as likely to modify existing valid programs out of the range of integrity as to modify initially poor programs in ways that might lead them to be successful. It also shows how haphazard the results of such initiatives can be unless managed with exceptional skill, wisdom, and what seems to be an ongoing stream of information that Elias and Clabby (1992) refer to as MEF/MOD—ongoing cycles of monitoring, evaluation, feedback, and program modification. This requires a considerable degree of organizational communication, coordination, and collaboration in an educational or other host setting. It is also worth noting briefly that children who are the recipients of prevention programs—especially over multiple years—also benefit from taking initiative and displaying industry over the course of the programs, rather than being given—disseminated—information from instructors. Adolescents—looking to forge their identity—also are unlikely to simply accept the dictates of a life skills program. Successful implementers report the necessity, for genuine skill acquisition, of some kind of active, creative, discovery, and personal construction of aspects of what a program has to offer, which seem to be fostered by experiential methods.

Complexity

London and MacDuffie (1985) provided a valuable operationalization of the variable of complexity of an innovation. Complexity relates to the scope of change required to carry out an innovation as a sociotechnical system. They identified number and distinctness of goals, perceived benefits and risks to those affected, speed with which change is agreed to and implemented (urgency and suddenness), how well the program and implementation process are grasped by those involved, extent to which the changes can and are implemented the same way in different locations within the setting, costs, impact on job/role performance, and interrelatedness of the changes to various organizational elements and priorities. If a new structure is implemented too rapidly or not communicated clearly, tasks are likely to be ambiguous; this leads people to not be sure of

what they are supposed to do, which in turn affects how they behave on their jobs (and there are person, group, and organizational factors that will determine reactions to this ambiguity).

The recipe for ease of implementation is low-complexity innovations that are less time-consuming, slow in occurring, take place in isolated functions, and can be communicated clearly—people understand the purpose, the implementation process, and their role in it. Thus, it is not surprising to find that an intervention program run by outsiders for a delimited period of time that purports to prevent problem behaviors with a minimal role for the teacher will seem quite appealing and is capable of being implemented in many settings. A widespread program of relatively low complexity is the Primary Mental Health Project. However, the broad impact of such approaches—especially in the absence of contiguous, longitudinal, coordinated programming—is quite difficult to establish (Commins & Elias, 1991).

Complexity provides another opportunity to revisit the classic "fidelity versus adaptation" distinction. In complex innovations, it is especially difficult to identify the core elements that are essential to a program's success, particularly through empirical validation. Nevertheless, it is important for innovation developers and those who attempt to bring innovations to new settings to delineate their beliefs about core elements and adaptive characteristics—those features that can be modified with relatively little negative impact. Clearly, bringing a complex innovation to a new setting raises problems related to uncertainty about the former and the latter. Innovation developers such as Slavin who have points on which they will not compromise are implicitly identifying core elements (Olson, 1994). But many of these can be subtle, and it should be assumed that such elements exist for many facets of complex innovations.

In fact, London and MacDuffie (1985) maintained that sociotechnical innovations—and certainly preventive interventions, particularly to the extent to which they are operator dependent—*cannot* be replicated. Users will make changes, whether sanctioned or not, so it makes the most sense to structure that input into the process of innovation diffusion. This raises the following problems: This will prolong the implementation time line; if not managed well, it may dilute the effectiveness of the innovation; and the systemic pace of change is slowed down because there may be a

limit to the number of supported change processes that can be undertaken.

Some Solutions to Challenges in Spreading Innovations

Solutions corresponding to problems related to operator dependence and complexity, although far from simple to carry out, follow from considerations mentioned to this point. First, do not deliver a totally "finished" product; rather, set up an expectation and a process for MEF/MOD. From the beginning, plan ongoing action research based on the principle of starting a "pilot" using the most basic model that has been used in a setting closest to one's own; subsequent modifying through MEF/MOD seems to balance pragmatic, theoretical, and empirical concerns in a systematic manner (Elias & Clabby, 1992). Much can be learned by studying what appears to be "necessary" across diverse sites, what can be modified, what cannot, and so on. It can be expected that after the pilot, the innovation will be reimplemented in modified form. Technical assistance and capacity building are a top priority, along with clear, regular, accessible communication channels among those affected by the innovation.

Agreement on goals must be strong, because these will sustain inevitable ambiguities and obstacles in the process. Strong, clear leadership is essential because hard choices will have to be made and midcourse corrections will be frequent; if an innovation is to spread with adequate support, resources may have to be pooled, concentrated, or channeled in areas or among groups where multiple competing but basically similar innovations are involved. The latter point has special salience in the prevention field, where the tendency is for individual developers to create their own unique and isolated operating systems. This is promulgated by grant mechanisms, pathways for academic advancement, and individual capitalism. There are, of course, exceptions, where investigators have come together to form consortia, work groups, networks, study groups, multisite collaborative projects, and the like (Elias et al., 1996), but these are all too rare, especially given the substantial benefits and impacts that such efforts seem to yield.

Price and Lorion (1989), who are more sanguine about the possibility of specifying the workings and impact of separate com-

ponents of prevention efforts, urged that regardless of the difficulties of so doing, the spread of innovations benefits from organizational focusing. Even if an intervention has many components and is "complex," it is valuable for it to have a simple profile so that it can be easily recognized. This is also related to the idea of starting in a contained way, with a pilot program. There should be a sense of "We are here to . . . " and "The way we do this is through 1 . . . 2 . . . 3 . . . "—this allows for mobilization of internal resources and overall improved project management. While the reality is more complex, focusing allows communication and key elements to be prioritized planfully (Van de Ven, 1986).

Summary

Dissemination is best conceptualized as a continuous process of implementation and adaptation. To the extent to which an innovation is operator dependent and has fewer technical features, guidelines for making the proper adaptations without rendering key elements of a program ineffective are quite scarce. This validates, among other things, the benefits that derive from having on-site consultants experienced with implementing one's innovation in related settings available to assist with the kinds of configural decision making and anticipations that will be necessary if the effort is to proceed. And it explains why researchers and program developers are loathe to abandon the idea of magic bullet, time-limited, inoculationist, or technology-driven innovations that can be disseminated "informationally," thus minimizing the challenges associated with operator-dependent, sociotechnical systems.

The common denominator appears to be, for operator-dependent or complex sociotechnical programs, limitations in the effectiveness of information-based dissemination as a strategy for training program implementers or for those actually receiving the programs. When dissemination occurs after limited initial trials—even in the context of a single 5-year demonstration project—one often does not have time to delineate the key enduring principles of an intervention in a way that gives less weight to local or idiosyncratic factors. This results in dissemination sites often having to do the equivalent of flying blind in a fog, or trying to play a musical composition while missing some bars or even pages, or else notation about phrasing, tempo, and dynamics of sound. These contexts do

not confer automatic failure; indeed, they can produce more limited success, the expected result, or even greater than anticipated success. However, the likelihood of the latter two is not high, and it is greatly dependent on the skills of implementers in the new setting and fortuitous factors, such as obtaining extra resources. Successful dissemination—which implicitly involves some degree of genuine systemic change—represents a collaborative process (Stokols, 1986).

Spreading the Social Decision Making and Problem Solving Project to Many Settings: An Example Still in Progress

The Social Decision Making and Problem Solving Project has been guided by many of the above points as, over a period of 17 years as of this writing, it has spread from a demonstration project in two experimental and three control classrooms to hundreds of classrooms in schools in two dozen states and several countries, as well as nearly 30 school districts in New Jersey. The core of the project involves building the social and emotional skills of students, with a focus on self-control, group participation and social awareness, and a decision-making strategy to use when faced with difficult choices under stress or when planning, toward the goal of promoting successful social and academic performance and preventing problem behaviors (Elias & Clabby, 1992; Elias & Tobias, 1996).

Issues in dissemination that occupied our attention can be gleaned most directly from the praxis equation presented earlier. It is important to note that from the inception of the project, care was taken to make the initial implementation conditions match those likely in the implementation environment. Thus, while there was funding for action research, little of this went into creating ideal training conditions, providing resources and materials to implementing teachers, paying for any training or implementation work, having experts work directly in classrooms, or finding locations with strong receptivity to prior innovations. Furthermore, we were acutely aware of developmental factors and of the need to modify what we were doing for diverse populations, particularly children with special education classifications.

Evolution of the Elementary School-Level Program

The history of much of this effort, as well as the way in which planned and unplanned variations in conditions were addressed, is detailed in Elias and Clabby (1992). Key points, however, can be described here. At the elementary school level, we created a scripted curriculum with extensive accompanying materials, all developed through 9 years of iterations in an action research cycle. Other action research cycles were created to support modifications of the approach for special education and middle and high school populations. In particular, the creation of an acronym for the eight steps of social decision making—"FIG TESPN"—led to dramatic differences in delivering the program to special education students (Elias & Tobias, 1996). Another important finding was the need to take what was originally our third phase of implementation—the application phase, where the skills of the program were systematically applied to academic and social/interpersonal and personal contexts—and begin it much sooner, while the basic social and emotional skills were being learned.

There was also a need to share learnings across implementation sites, and to do so in a systematic way. We created the *Problem Solving Connection Newsletter,* a Resource Exchange Network for those using social problem solving or related interventions; it became a place to ask questions and to share innovations, to incorporate diversity and change into the implementation context. It is where the "Keep Calm Rap" was developed and redeveloped, as well as "Be Your Best," which one class began to sing to the tune of Disney's "Be Our Guest," from *Beauty and the Beast.*

Adaptation to the Middle School

While there is far less uniformity among elementary schools than unsuspecting outsiders might think, there is even greater diversity among middle schools. This means that intervention technologies are not easily transferred from elementary to middle school. But it also means that successful interventions in one middle school context must be transferred to others with much care. In our work attempting to provide follow-up for the elementary school-level Social Decision Making and Problem Solving program into middle school, we found that numerous adaptations had to be made. We found this out by applying the principles of action research, but also by being clear about the essence and intention of the program. Even after creating successful demonstration projects, however, we did not feel as if the work was completed. We needed to provide a well-annotated musical score for others to use. This gave rise to the book *Social Decision Making and Life Skills Development* (Elias, 1993).

The essence of the approach was to provide key principles and specific examples as inspiration, rather than fully scripted materials. Those who made local implementations of social problem solving—local conductors, the first players of different orchestral sections, and some individual musicians—were helped to explicate its phrases and provide others with samples that they can use. Throughout, it was clear that to be successful, we would have to mesh with others' perspectives so that readers could see themselves using the materials, at first, similarly to the examples provided, but soon thereafter, integrated into their own skills and context.

The first part of each innovation presented was a sales pitch—to make the program sound attractive and viable to people working with the kinds of problems the authors were dealing with, but who are less interested and motivated than are the authors. Then came a discussion of the materials—what it is and how to use it—and next was evidence of its effectiveness, accompanied by listings of follow-up and support resources. Finally, there were sample activities, to allow readers to try out specific units, modules, and so on and get a feel not only for the particular details but also get a sense of the flow of the activities with the individuals and groups involved (Elias, 1993). Some examples of modules are the following:

1. A video program that shows children how to watch television and then take it apart, to see people create media programs and then to use social decision making and problem solving to create their own programs, series, documentaries, and public service advertisements.
2. A program to allow students to create school and community service projects.
3. A procedure for creating parent newsletters and other school-home communications; the detail includes such things as what to tell the printer when it comes to reproducing photographs.

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4. FIG TESPN, an approach to social decision making and problem solving that takes into account the special learning needs of many children with learning handicaps.
5. Troubleshooting sections, where the practitioners in the field talk about the tough issues and how they have dealt with them, such as getting started, not having enough time, and working with children who seem to place a positive value on aggressive behavior; this moves the state of practice from the basic issues to a more advanced set of concerns.

To support the process of widespread implementation with fidelity and effectiveness in diverse contexts, it was necessary to pay great attention to implementation infrastructure. Using the analogy of music, one can imagine the difficulty in playing a piece of orchestral music one has not heard in its entirety. For this to happen, it is helpful to have ongoing concerts that others can attend, to be able to train master conductors and musicians who will have had experience with the musical work and then can go back and teach it to others, and to have the capacity to send out conductors and musicians to local settings to assist them in learning to play, as well as to help them make modifications in light of their own orchestral strengths and weaknesses and to avoid making modifications that will change the nature of the composition.

A Social Problem Solving Unit was created within the University of Medicine and Dentistry of New Jersey–Community Mental Health Center at Piscataway, in partnership with Rutgers University, especially the Center for Applied Psychology of the Graduate School of Applied and Professional Psychology. This unit has as its mission fostering the implementation of the Social Decision Making and Problem Solving program to school districts across the nation—and internationally—with an action research orientation and high fidelity to parameters of implementation known to be effective for this program. It does so by carrying out the main functions described above with regard to implementation of an orchestral work, as well as the Resource Exchange and other facets described earlier. The program and unit gained approval from the National Mental Health Association (winning the 1988 Lela Rowland Prevention Award and being designated as a model program in the NMHA Prevention Clearinghouse), the National

Diffusion Network of the U.S. Department of Education (which itself is now undergoing a transformation), and the National Education Goals Panel, critical steps in building credibility and opening up contacts with networks of potential and actual implementers from which further refinements in practice and sources of implementation support could be derived.

Data concerning the evaluation of the dissemination of the approaches of the Social Decision Making and Problem Solving Project are available from three major studies. Commins and Elias (1991) undertook an examination of the first four sites to implement the Social Decision Making and Problem Solving program. The methodology involved identifying key conditions empirically found most likely to facilitate long-term program implementation. The two districts showing 10 of 10 conditions were found to have made substantial progress toward institutionalization; the district showing 9 of 10 conditions had made substantial progress; the one showing 4 of 10 conditions showed almost no progress. This study was the first to show that the program was capable of being disseminated effectively and that results of dissemination were a function of implementation parameters. Anecdotally, it is worth noting that of the four districts studied by Commins and Elias in 1987, 9 years later, the Social Decision Making and Problem Solving program has a clear, visible presence in the two "10 of 10" districts, has been integrated into the elementary guidance program in the "9 of 10" district, and is implemented only on a sporadic, individual basis in the remaining district.

Heller and Firestone (1995) conducted a study of the sources of leadership in schools that had implemented long-term social and emotional learning programs. As part of this study, nine elementary schools that had implemented Social Decision Making and Problem Solving for at least 3 years were identified. An interview procedure was set up to determine the degree of institutionalization of the program. They found that five of nine schools had institutionalized the program to a significant degree. Four were deemed "fully institutionalized," meaning that all teachers were using the program with high fidelity. One was designated as "mixed," in that there was a core group of teachers that were high-fidelity users of the program with others using the program less rigorously, and four had a "partial" status, meaning that they maintained affiliation with the Social Decision Making and Problem Solving "experts" and

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teachers were using the program, although in generally limited, low-fidelity ways.

Detailed analysis of mediating factors indicated that full institutionalization was related primarily to leadership roles being filled consistently and by multiple individuals, usually from varied roles, and to having school-based Social Decision Making and Problem Solving resources or coordinating "committees" of some kind. Relatedly, if there was a critical role in the institutionalization of Social Decision Making and Problem Solving programs, it would have to be teachers, rather than administrators. That is, long-term, high-fidelity institutionalization was more likely when there was an active group consisting of those who implemented the program and who were closest to its impacts. Essential among the activities of such groups were providing a sustained vision of the program, offering encouragement, and setting up in-house procedures to monitor its progress and improve its effectiveness (Heller & Firestone, 1995).

As the Social Decision Making and Problem Solving program expanded through involvement with the National Diffusion Network, trainers were bringing the program to sites inside and outside of its New Jersey base. Beyond a focus on implementation, it became important to examine the extent to which teachers and student recipients of the program were developing their skills to the same degrees as they did in the initial validation sample. In the initial samples, of course, the program was smaller, there were fewer implementation sites, and program management was closer and more intensive. For the more recent study, three new sites in New Jersey plus sites in Arkansas and Oregon were studied.

Results are summarized in Bruene-Butler, Hampson, Elias, Clabby, and Schuyler (1997). Briefly, extent of teacher acquisition of skills in "dialoguing" and "facilitative questioning" met or exceeded those of the original sample in all of the new sites. Comparing Oregon and the original New Jersey site, use of inhibitory questioning strategies declined from pretest to posttest, 53% and 40%, respectively; use of facilitative questioning increased by 117% and 35%, respectively. With regard to acquisition of interpersonal sensitivity, problem analysis, and planning skills, students in all of the recent dissemination sites showed significant pre to post gains, and the effect sizes in all cases were equal to or as much as twice as large as those in the original validation sample. The Bruene-Butler

et al. data suggest that the implementation of the Social Decision Making and Problem Solving program in sites assessed in 1994 and 1995 can occur in ways that allow its impact on teachers and students to be as strong as it was in the initial implementation site, where it was begun in 1980.

Technology-Based Applications

The most recent set of innovations relates to the use of technology to deliver social decision making and problem solving. When the opportunity arose to join others who felt that disaffected elementary school-aged children were not receptive to school-based programs, or too often were in school environments that did not value the building of their social competence or the transfer of health and life skills outside the classroom, I began participating with the Hallmark Child Philanthropic Foundation to develop a series of social competence promotion interventions. This exciting project involved the development of a video-based program for 9- to 11-year-olds, to be disseminated by existing networks for training within Boys and Girls Clubs, Girl Scouts, and 4-H Clubs around the nation, a strategy designed to help reach at-risk and disaffected youth who are not responsive to school-based programs. This is an action research project of remarkable scope, centered around the character of TJ, a wheelchair-using African American girl who is the problem-solving DJ for a radio call-in show for kids, along with support characters Jeff, her sort of spaced-out engineer and sound-effects man, and station manager Ray Dio, a former DJ who had his heyday in the '60s and '70s and brings maturity, perspective, and a lot of Latin music and rhythms to the station. The themes for the program are teamwork and cooperation, peaceful conflict resolution, and dealing with anger. Initial data from pilot testing of portions of the program showed meaningful and higher than expected effects on children's self-reported skill knowledge and attitudes and observed behaviors in the clubs (Johnston, Bauman, Milne, & Urdan, 1993). Extensive formative evaluation has taken place to ensure that key aspects of implementation—receptivity and responsiveness of diverse audiences of children, retention of program content and themes, enthusiasm for carrying out activities and follow-up projects based on the videos, and clarity of implementation directions for local group leaders—would be built

into the program from the inception. At this point, TJ materials have reached more than 2 million children, making it perhaps the largest systematic program of its kind since Head Start (see Elias & Bartz, 1995; Elias & Tobias, 1996; Hallmark Charitable Foundation, 1994, for details).

To take further advantage of the ways in which video and computers enhance receptivity and effectiveness of social-competence-building efforts among populations that are diverse with regard to culture and learning skills, an organization called Psychological Enterprises Incorporated was developed. Its first activities involved generating a computer software program that provides a tutorial on the steps of social decision making, as well as a vehicle for individual students to work through discipline problems, clinical issues, or even to problem solve preventively (Psychological Enterprises Incorporated, 1993). Action research on this technology and its applications in clinical (Elias, Tobias, & Friedlander, 1994) and school (Elias, Hoover, & Poedubicky, in press; Nigro, 1995) contexts has begun (Elias & Tobias, 1996).

Creating a School-Based Infrastructure for Successful Widespread Efforts at Problem Prevention and Building Social Competence

For preventive innovations to spread and have an impact of the kind that can be incorporated into school settings and detected in statistics such as those recorded by *Healthy People 2000* and *Kids Count*, it will be necessary to create interconnected implementation networks. Documentation and sharing of implementation across different settings, contexts, and types of innovations, as well as variations in the many other relevant implementation parameters, will allow the growth of the field and the improvement of practice. This will require collaborative efforts at many levels, more than can be outlined here and more than has been the tendency to date. Success in community coalition building provides a model (Kaye & Wolff, 1995; Wolff, 1987), although at even larger and more inclusive levels.

To assist in that process, Table 9.1 offers suggestions by Ralph and Dwyer (1988) concerning the kind of documentation that will allow inferences to be made about preventive innovations as complex sociotechnical systems. These complement the praxis equation and other implementation considerations outlined throughout.

Action researchers/evaluators must accomplish a difficult task to make a clear and logical presentation of various types of data showing the operation and effects of various program elements that are incorporated into a systemwide preventive effort. It is a further and even more difficult step to relate these effects to long-term, large-scale outcomes. These criteria are rarely met by prevention programs in operation, even by well-funded university-based action research demonstration projects. Given these realities, it is noteworthy that the approach outlined in Table 9.1 is based on a legal model. That is, causal proof, strict experimental evidence, is not required; what must be presented is evidence that claims have been met, beyond a reasonable doubt. It is the accumulation of evidence, at any one point and over time, that is essential.

Pragmatically, those bringing programs into new settings must demonstrate that goals are better met after the inception of the program, that this continues to be the case for several years afterward, that there is implementation of the core principles, that there is receptivity and responsiveness among implementers and recipients, that quality is sustained despite changes in the configuration of initial implementers, that there have been no significant unintended negative effects, and that there is a process of renewal, linkage with other efforts, or MEF/MOD taking place to allow for generativity.

The steps in the process are summarized in Table 9.2, again derived from work of RMC Research with the National Diffusion Network. The tasks are listed from the perspective of a unit or entity whose goal is to bring a preventive effort to multiple settings. Thus, the final step—involving a network of implementing sites—is the one that distinguishes widespread from limited implementation. As we begin to look carefully and realistically at the widespread implementation of prevention activities, it is clear that an infrastructure is needed to foster connections among settings and relationships with the innovation developers or other centers of expertise. For example, RMC Research Corporation's (1995; Ralph & Dwyer, 1988) experience in monitoring the diffusion of programs suggests that in Year 1 of an effort to bring a program to other settings, 50% of the developer's activities are devoted to generating awareness of the innovation in many other sites. The

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Table 9.1 Documenting the Impact of a Preventive Innovation on School-wide or Systemwide Change and Its Dissemination to Other Settings: Considerations Before Declaring Success

If a baseline for comparison is used that is external to the focal setting, are the preprogram similarities of the treatment and comparison schools or systems documented for all educationally relevant variables in addition to those directly addressed by the program (e.g., racial, ethnic, socioeconomic, institution size, and resources)?
If the baseline is internal, are the pre- and postprogram conditions documented by sufficient data to overcome normal fluctuations and demonstrate trends convincingly?
If samples from the entire population are used, are they representative? Are they large enough to generalize with confidence to the population as a whole?
What is the impact on core missions/goals? For example, in schools, what is the impact on academics and/or behavior? What unintended positive and negative effects might exist?
Are the students attaining program goals at better-than-predicted levels after controlling for other student variables including socioeconomic status?
Are the effects sustained or do they represent gains in a single year that diminish over time, or gains in a single grade that diminish in later grades?
Where are the changes taking place as expected? Where are changes not taking place? What kinds of modifications need to be made?
Is there a plausible relationship between the nature of the changes made and long-term or large-scale effects being claimed? Does the change represent more than shifts in programmatic emphases and resources that were perhaps previously neglected? Have there been shifts in staff, professional development, or allocated time?

other half of the work is split among defining the innovation, developing materials targeting sites, and providing initial training. By Year 4, the distribution of activities has shifted such that only 10% is devoted to awareness, with 30% in direct consultation, 25% working with certified trainers, and the remaining time to MEF/MOD and following up various implementation sites. Obviously, resources appropriate to the nature and quantity of work required must be obtained, shifting as needed over time.

Relatedly, to learn more precisely about the diverse pathways that define successful dissemination, it will be useful to differentiate and study innovation implementation in first-, second-, and multi-

Table 9.1 Continued

Did the implementation coincide with other changes in the school's organization or resources that are not viewed as part of the systemwide reform program? Could these other changes have contributed to the observed effects?
Have there been changes in the population of the school or district? Is evidence presented to support the stability of conditions?
Do the changes or improvements compare favorably to standard practices in similar institutions? Is the demonstrated change worthwhile in terms of cost? Are the time savings worthwhile?
Have there been changes in measures or record keeping procedures over the course of the study that could affect the nature or size of outcomes? (This issue is a particularly important question when making use of school or district data collection not done specifically for the program evaluation; changes in report cards or standardized tests used by schools are not uncommon, for example.)
Is it possible that changes simply reflect developing trends in the larger educational milieu, for example, the influence of new state or federal requirements or changing social values?
How has the organization changed with regard to staff time, work demands, resource allocation, and other areas?
What is the pattern of the above findings across settings? What are the features of these settings? What differential effects are noted?

SOURCE: Information in this table is drawn from Ralph and Dwyer (1988).

generational contexts. Consider a model program as a "parent." From a generational perspective, there are numerous pathways that allow that parent to propagate with fidelity and integrity:

1. Pathways involving high levels of direct "parental" involvement
   a. In settings similar to the original
   b. In settings dissimilar to the original (similarity is defined in terms of target populations, implementation staff, and resources available)
2. Pathways involving low levels of direct parental involvement
3. Pathways involving high levels of involvement from primary assistants (trained directly by parents)
4. Pathways involving low levels of involvement from primary assistants

Table 9.2 Task Analysis for Single-Site and Widespread Prevention Program Implementation

Project definition
Determine key elements
Decide range of acceptable variations
Profile likely adopters
Establish an adoption organization and what will be considered as adoptions
Develop an overall diffusion plan and internal management system
Specify diffusion elements of the project—key elements to be disseminated, core components/criteria for minimal adoption, note revisions available and/or needed to enhance replicability in adopter sites
Identify target audiences
Marketing
Generate awareness strategies and materials
Identify related networks
Target adopters
Coordinate with other audiences—build effective working relationships with state education agencies, communication networks, professional associations
Specify evaluation guidelines for adopters—documentation of implementation and impact
Develop documentation and evaluation procedures for dissemination activities
Develop overall awareness plan—design materials, presentations; organize project facilities for demonstration purposes, plan training sessions
Conduct awareness activities
Installation
Assess adopter readiness
Negotiate adopter plans
Review and finalize products
Plan and conduct specialized consultation

5. Pathways involving high levels of involvement from second-generation trainees from the pilot
6. Pathways involving high levels of involvement from those experienced with one of the above levels of application but with no direct input from the model program
7. Pathways involving high levels of involvement from those who have seen a demonstration site, with relative degrees of connectedness with the model program/primary implementers

Table 9.2 Continued

Plan and conduct technical assistance
Develop adopter selection criteria
Negotiate with potential adopters—mutual expectations, availability and suitability of needed facilities, resources, materials, staff at adoption site, availability of consultation
Perform organizational assessment—identify key resources, personnel, subgroups; obtain commitments
Plan and conduct trainings
Develop support mechanisms within setting/district
Create an implementation plan, including evaluation design
Begin implementation plan
Follow-up
Evaluate use of key elements by adopters
Evaluate impact at selected sites
Provide additional follow-up to assure satisfactory replication
Monitor and conduct follow-up
Project network building
Maintain ongoing contact with adopters
Train trainers
Establish demonstration sites
Create information sharing networks of adopters, trainers, demonstration sites, site leaders
Create linkages with professional association training contexts
Extend project services through selection, training, management of certified trainers, satellite demonstration sites
Provide reports documenting diffusion activities, sharing ideas

SOURCE: Information in this table is drawn from Ralph and Dwyer (1988) and RMC Research Corporation (1995).

Successful widespread implementation of a "model" program requires it to traverse one or more of these pathways; furthermore, each specific instantiation of the model ideally will remain linked to the overall network of such implementations so that its experiences can inform others and so that it can contribute to further spreading the implementation of the model program.

An explication of the task and process issues involved in implementing a preventive effort in one and then many sites provides

benchmarks useful both in an adoption site and in a "dissemination unit" for continuing their efforts. From accumulations of such documented examples, some of which may be more or less complete and address many or few of the concerns outlined in Tables 9.1 and 9.2 directly, inferences about the spread of a program can be sharpened with regard to contexts and conditions. Furthermore, much can be learned in general about the implementation of innovation in the prevention field.

Conclusions and Recommendations

Issues like violence, alcohol and other drug use, AIDS, academic failure, and school disaffection and dropout require public health solutions—bold, definitive, efficacious, widespread, and sustained efforts. What is at stake is the future health of our youth and what they will become when they are adults and in a position to take over the responsibilities of citizenship in our democracy. We cannot afford to have a situation in which the spread of preventive and competence-promoting innovations is approached naively, unrealistically, or misleadingly. The Emperor must be clothed, and the time for action is now. We must begin with the preparation of the key gatekeepers over preventive innovations in the schools. There are no shortcuts, inoculations, or preventive approaches that can succeed once "installed" in the absence of oversight and MEF/MOD.

The Social Decision Making and Problem Solving Project has been presented as an example of how conditions can be created so that health promotion and risk reduction programs can be brought into schools and implemented with integrity and skills acquisition. The kind of concerted, focused effort required needs to be incorporated into the formulation of public health policy documents such as *Healthy People 2010* so that the planning information they contain can reflect implementation realities.

What will it take, from an implementation perspective, to reach *Healthy People 2010* objectives for youth? First, all service objectives should include specific statements about high-quality implementation of programs. Such statements would then be matched

by surveillance objectives that would examine the extent to which programs selected have a high likelihood of successful implementation, and the quality of the implementation effort.

Clearly, problems will persist in schools while efforts move forward to develop better models and procedures for developing the social and emotional skills of our youth. Nevertheless, we must ask what conditions make it most likely that programs for promoting the health of youth can be implemented. In brief, what is required is the development of a school-based infrastructure that will allow programs to be brought in thoughtfully, carried out carefully, and modified appropriately in light of feedback concerning their impact. Specifically, I recommend:

1. Educational administrators need to be prepared to be action researchers, considering the collective impact of prevention and competence-building programs and related innovations, working to combine them, and tracking their progress continually, until and even after goals appear to be attained.
2. Concomitant changes are needed in higher education, in teacher and administrator training and supervision, and in the preparation of pupil services staff. Institutions of educational preparation that are not willing and able to instill the necessary attitudes and skills to implement preventive and health promotive innovations in schools should not be accredited as places where educators are being prepared.
3. All schools should become centers for parenting support and education, to maximize the preventive impact of what takes place in schools and to help parents apply what is known about social and emotional development and problem prevention in their own homes.

Ultimately, there is no substitute for creating the infrastructure of widespread implementation of preventive innovation. The current emphasis on invention must be complemented with the realization that the challenges of implementing operator-dependent sociotechnical systems for prevention in nondemonstration contexts are both intellectual and practical and must be met if we are to reach our national health goals and improve our nation's standing among other countries with regard to the well-being of our youth.

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